

REMARKS

This is in full and timely response to the third non-final Office Action dated April 7, 2004 (Paper No. 15). The present amendment amends claims 23-26, 30, 35, 36, 38, 39, 43 and 44, and otherwise disputes certain findings of fact made in connection with the rejection of the claims. Support for these amendments can be found variously throughout the specification, including, for example, original claims 1-22. No new matter has been added. Accordingly, claims 23-27, 29-36, 38, 39 and 41-44 are presently pending in the application, each of which are believed to be in condition for allowance. Reexamination and reconsideration in light of the present amendment and the following remarks are respectfully requested.

Requested Prior Art

The Applicant has been unable to locate other applicable references aside from those previously produced and already in the possession of the examiner. Should any such references or publications come to the attention of the Applicant, they will be forwarded to the examiner for consideration.

Claim Rejections – 35 U.S.C. § 112

In the Action, claim 23 was rejected under 35 U.S.C. § 112, second paragraph, for alleged indefiniteness. Applicant respectfully traverses this rejection. However, in order to expedite prosecution, claim 23 has been amended in order to overcome this rejection. Withdrawal of this rejection is therefore courteously solicited.

Claim Rejections – 35 U.S.C. § 103

In the action, claims 23-27, 29-39 and 41-44 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious in view of the Admitted Prior Art ("APA") detailed on pages 1-7 of the Background Section of the Appellant's Application. These rejections are respectfully traversed for at least the foregoing reasons.

1. **Claims 23, 25, 27, 29, 30-35 are Not Obvious**

Independent claim 23 recites a parallel processor wherein, *inter alia*,
a first processor element executes a wait instruction that suspends processing of a first

user program; a second processor element executes a wait release instruction that commands the first processor element to resume processing of the first user program; the second processor element executes a synchronization wait instruction that suspends processing of a second user program; and the first processor element executes a program end instruction that resumes processing of the second user program.

The APA, in contrast, fails to disclose, teach or suggest each of the limitations recited in claim 23. For example, contrary to the examiner's allegations, the APA fails to disclose, teach or suggest of a first processor element that executes: 1) a wait instruction suspending processing of a first user program, and 2) a program end instruction that resumes processing of a second user program, as is recited in claim 23 of the present invention. The APA merely teaches of a first processor element PE11₄ that executes a program instruction code "end" so as to release a second processor element PE11₁ from a synchronization waiting state. *See* page 8, lines 18-25 and Fig. 8. No disclosure, teaching or suggestion is made of the second processor element PE11₁ of the APA executing a wait release instruction that commands the first processor element PE11₄ to resume processing of a first user program, nor does the APA disclose, teach or suggest the first processor element 11₄ executing a wait instruction that suspends processing of a first user program.

In an attempt to overcome the APA's deficiencies, the examiner argues, contrary to the clear teachings of the APA, that the first processing element should be interpreted as PE11₁, and that the second processor element should be interpreted as PE11₄. Even if this were the case, Figure 8 of the APA still fails to disclose, teach or suggest the alleged first processor element PE11₁ as executing a program end instruction and as resuming processing of the user program in the alleged second processor element PE11₄. Recognizing this, the examiner contends that:

Although the APA does not explicitly disclose the first processor executing a "program end instruction" to cause resumption of the second program, it would have been obvious for one skilled in the art, from the APA's "instruction code end" teaching wherein processor 11₄ conveys a release/resume command to processor 11₁ when processor 11₄ has executed an "end" instruction, to provide that the first processor would likewise employ this function to have the second program resume its execution.

The examiner's interpretations and findings of fact are, however, not supported by the APA. Specifically, the APA teaches that a main program prg_A controls the execution of various subprograms prg_B through prg_E in the local memories of the various processor elements PE11₂ through PE11₄. See pg. 5, lines 11-16. In so doing, prg_A must receive signals from the various processor elements via the arbiter 16 as to the status and/or completion of the various subprograms in order to remain synchronized. See pg. 5, lines 17-24. However, processor elements PE11₂ through PE11₄ of the APA have no need for knowing when PE11₁ has completed the execution of prg_A. In fact, the only signals that are sent from PE11₁ via the arbiter 16 to PE11₂ through PE11₄ are general instruction codes in the form of "gen(prg_B/C/D/E)". Neither "wait release" instructions nor "program end" instructions are ever sent from PE11₁ to any of the processor elements PE11₂ through PE11₄. Thus, the examiner's arguments clearly run contrary to the disclosure of the APA.

The mere fact that the APA can be modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See, e.g., *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). To do so would be an impermissible use of hindsight reconstruction from Applicant's disclosure. *In re Dembiczak*, 50 USPQ2d 1614 (Fed. Cir. 1999). It would appear that any suggestion or motivation of such a modification as suggested by the examiner flows, not from the prior art going forward toward the invention claimed, but in a hindsight manner based on the teachings of the specification. Accordingly, because the APA fails to teach each and every limitation of claim 23, a *prima facie* rejection of the claims has not been established and withdrawal thereof is respectfully requested. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) ("To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art").

Moreover, aside from the novel limitations recited therein, dependent claims 25, 27, 29 and 30-35, being dependent either directly or indirectly upon independent claim 23, also represent allowable subject matter for at least the reasons set forth above. Withdrawal of the rejection of these claims is therefore respectfully requested.

2. Independent Claim 24 is Not Obvious

Independent claim 24 recites a parallel processor wherein, *inter alia*, the second

processor element executes a synchronization wait instruction which suspends processing of the second user program, and the wait instruction suspends processing of the first user program while resuming the processing of the second user program.

In the Action, the examiner contends that the APA teaches of an alleged second processor element PE11₄ as executing an “end” instruction as a wait release instruction, such that the “end” instruction commands an alleged first processor element PE11₁ to resume the processing of a first user program. Even if PE11₁ and PE11₄ were to represent first and second processor elements, respectively, as alleged by the examiner, the APA still fails to disclose, teach or suggest each and every limitation of claim 24. Namely, while Figure 8 of the APA arguably teaches of an “end” instruction processed by the alleged second processor element 114, Figure 8 of the APA fails to disclose, teach or suggest the alleged second processor element PE11₄ as also executing a synchronization wait instruction that suspends processing of a second user program in PE11₄, as is recited in independent claim 24 of the present invention. This feature was not addressed within the Office Action.

In addition, Figure 8 of the APA fails to disclose, teach or suggest the wait instruction suspending processing of the first user program while resuming the processing of the second user program. As with the previous element, this feature has not been addressed within the Office Action. Accordingly, since the applied art fails to teach each and every limitation of claim 24, a *prima facie* rejection of the claims has not been established and withdrawal thereof is respectfully requested.

3. Independent Claim 26 is Not Obvious

Independent claim 26 recites a parallel processor wherein, *inter alia*, the second processor element executes a next instruction without suspending the processing of the second user program after executing the wait release instruction.

Even if PE11₁ and PE11₄ were to represent first and second processor elements, respectively, as alleged by the examiner, Figure 8 of the APA still fails to disclose, teach or suggest the alleged second processor element PE11₄ executing a next instruction without suspending the processing of the second user program after executing the alleged wait release instruction (“end”). Instead, Figure 8 of the APA depicts the termination of the second user program after executing the alleged wait release instruction (“end”). Accordingly, since the applied art fails to teach each and every limitation of claim 26, a *prima facie* rejection of the

claims has not been established and withdrawal thereof is respectfully requested.

4. Claims 36, 41 and 42 are Not Obvious

Claim 36 recites a parallel processor wherein, *inter alia*, a first processor element executes a program end instruction, the program end instruction serving to resume the processing of a second user program.

In an attempt to overcome the APA's deficiencies, the examiner argues, contrary to the clear teachings of the APA, that the first processing element should be interpreted as PE11₁, and that the second processor element should be interpreted as PE11₄. Even if this were the case, Figure 8 of the APA still fails to disclose, teach or suggest the alleged first processor element PE11₁ as executing a program end instruction and as resuming processing of the user program in the alleged second processor element PE11₄, as is set forth in greater detail in Section 1, *supra*.

Accordingly, since the applied art fails to teach each and every limitation of claim 36, a *prima facie* rejection of the claims has not been established and withdrawal thereof is respectfully requested.

Moreover, aside from the novel limitations recited therein, dependent claims 41 and 42, being dependent upon independent claim 36, also represent allowable subject matter for at least the reasons set forth above. Withdrawal of the rejection of these claims is therefore respectfully requested.

5. Independent Claim 38 is Not Obvious

Independent claim 38 recites a parallel processor wherein, *inter alia*, the second processor element executes a synchronization wait instruction which suspends processing of the second user program, and the wait instruction suspends processing of the first user program while resuming the processing of the second user program.

In the Action, the examiner contends that the APA teaches of an alleged second processor element PE11₄ as executing an "end" instruction as a wait release instruction, such that the "end" instruction commands an alleged first processor element PE11₁ to resume the processing of a first user program. Even if PE11₁ and PE11₄ were to represent first and second processor elements, respectively, as alleged by the examiner, the APA still fails to disclose, teach or suggest each and every limitation of claim 38. Namely, while Figure 8 of the APA arguably teaches of an "end" instruction processed by the alleged second processor element 114, Figure 8 of the APA fails to disclose, teach or suggest the alleged second processor element

PE11₄ as also executing a synchronization wait instruction that suspends processing of a second user program in PE11₄, as is recited in independent claim 38 of the present invention. This feature was not addressed within the Office Action.

In addition, Figure 8 of the APA fails to disclose, teach or suggest the wait instruction suspending processing of the first user program while resuming the processing of the second user program. As with the previous element, this feature has not been addressed within the Office Action. Accordingly, since the applied art fails to teach each and every limitation of claim 38, a *prima facie* rejection of the claims has not been established and withdrawal thereof is respectfully requested.

6. Independent Claim 39 is Not Obvious

Independent claim 39 recites a parallel processor wherein, *inter alia*, the second processor element executes a next instruction without suspending the processing of the second user program after executing the wait release instruction.

Even if PE11₁ and PE11₄ were to represent first and second processor elements, respectively, as alleged by the examiner, Figure 8 of the APA still fails to disclose, teach or suggest the alleged second processor element PE11₄ as executing a next instruction without suspending the processing of the second user program after executing the alleged wait release instruction ("end"). Instead, Figure 8 of the APA depicts the termination of the second user program after executing the alleged wait release instruction ("end").

Accordingly, since the applied art fails to teach each and every limitation of claim 39, a *prima facie* rejection of the claims has not been established and withdrawal thereof is respectfully requested.

7. Independent Claim 43 is Not Obvious

Independent claim 43 recites a storage medium for storing in a computer-readable format routines wherein, *inter alia*, the second processing enters a synchronization waiting state by executing the wait release instruction until the first processing enters the waiting state when the first processing is not in the waiting state.

In the Action, the examiner contends that the APA teaches of an alleged second processor element PE11₄ as executing an "end" instruction as a wait release instruction, such that the "end" instruction commands an alleged first processor element PE11₁ to resume the processing of a first user program. Even if PE11₁ and PE11₄ were to represent first and second

processor elements, respectively, as alleged by the examiner, the APA still fails to disclose, teach or suggest each and every limitation of claim 43. Namely, while Figure 8 of the APA arguably teaches of an "end" instruction processed by the alleged second processor element 114, Figure 8 of the APA fails to disclose, teach or suggest the alleged second processor element PE114 as also executing a synchronization wait instruction that suspends processing of a second user program in PE114, as is recited in independent claim 43 of the present invention. This feature was not addressed within the Office Action.

In addition, Figure 8 of the APA fails to disclose, teach or suggest the wait instruction suspending processing of the first user program while resuming the processing of the second user program. As with the previous element, this feature has not been addressed within the Office Action. Accordingly, since the applied art fails to teach each and every limitation of claim 43, a *prima facie* rejection of the claims has not been established and withdrawal thereof is respectfully requested.

8. Independent Claim 44 is Not Obvious

Independent claim 44 recites a storage medium for storing in a computer-readable format routines wherein, *inter alia*, a second processing executes a next instruction after executing a wait release instruction without suspending the second processing.

Even if PE111 and PE 114 were to represent first and second processor elements, respectively, as alleged by the examiner, Figure 8 of the APA still fails to disclose, teach or suggest the alleged second processor element PE114 as executing a next instruction without suspending the processing of the second user program after executing the alleged wait release instruction ("end"). Instead, Figure 8 of the APA depicts the termination of the second user program after executing the alleged wait release instruction ("end").

Accordingly, since the applied art fails to teach each and every limitation of claim 44, a *prima facie* rejection of the claims has not been established and withdrawal thereof is respectfully requested.

Conclusion

For at least the foregoing reasons, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the examiner is respectfully requested to pass this application to issue. If the examiner has any comments or suggestions that could place this application in even better form, the examiner is invited to telephone the undersigned attorney at the below-listed number.

Applicant believes no fee is due with this request. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-1661, from which the undersigned is authorized to draw.

Dated: June 22, 2004

Respectfully submitted,

By 

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